

APPENDIX I

SECTION 404(b)(1) EVALUATION

SECTION 404(b)(1) EVALUATION DREDGED MATERIAL

I. Project Description

a. Location. Leisey Shell Pits, Cockroach Bay Restoration Project, Tampa Bay, Hillsborough County, Florida.

b. General Description. The Corps is proposing to place dredged material from the construction of Manatee Harbor Phase II in Tampa Harbor into the the Leisy Shell Pits which is part of the Cockroach Bay Restoration Project in southeast Tampa Bay.

c. Authority and Purpose. Pursuant to Section 204 of the Water Resources Development Act of 1992, the US Army Corps of Engineers was delegated the authority to look for opportunities for using dredged material in a way beneficial to the aquatic environment. The Habitat Restoration Committee of the Agency on Bay Management, Tampa Bay Regional Planning Council, presented this proposal to the Corps for consideration. The purpose of this project is to create 75 acres of estuarine habitat.

d. General Description of Dredged or Fill Material

(1) General Characteristics of Material. The excavated material to be placed in the pits would be pre-Colombian material from the Tampa Bay bottom.

(2) Quantity of Material. Approximately 600,000 cubic yards of dredged material will be placed in the pits.

(3) Source of Material. The material will be excavated from the Bay bottom adjacent to the Manatee Harbor entrance channel.

e. Description of the Proposed Discharge Site.

(1) Size and Location. The placement area is located in the 75-acre Leisey Shell Pits in Hillsborough County, Florida near Sun City.

(2) Type of Site. The site is former shell mining pits. The pits contain freshwater agricultural run-off with a berm is located around each pit. The bottoms of the pits collect silty sediments from agricultural run-off.

(3) Type of Habitat. The pits are an anoxic water body that provides some habitat for waterfowl and freshwater fish. Good quality habitat is limited in the site.

(4) Timing and Duration of Discharge. The total dredging and placement episode

will last approximately 6 months.

f. Description of Disposal Method. The construction of Manatee Harbor Phase II would likely be conducted with a hydraulic dredge and pumped via pipeline to the pits or by clamshell and barged to a pump-out facility and pumped via pipeline to the pits.

II. Factual Determinations

a. Physical Substrate Determinations.

- (1) Substrate Elevation and Slope. Not applicable.
- (2) Sediment Type. The pits contain a silty substrate underlain by shell deposits.
- (3) Dredged/Fill Material Movement. The dredged material would be confined within the pits.
- (4) Physical Effects on Benthos. Placement will result in the loss of benthic organisms at the placement site.
- (5) Other Effects. Salt water would kill the freshwater fish and other organisms in the pits.
- (6) Actions Taken to Minimize Impacts. None are applicable.

b. Water Circulation, Fluctuation and Salinity Determinations

(1) Water

- (a) Salinity. The water currently is fresh water with some saltwater intrusion underneath the berms. The project will change that to an oligohaline environment.
- (b) Water Chemistry. There will be no changes in water chemistry at the site.
- (c) Clarity. There will be a temporary increase in turbidity in the pits. One pit will be used as a settling basin, while the second will be used for final settling of fines remaining. Once the first pit is filled, the process will be reversed.
- (d) Color. Due to the minor silt content, there will be a brown turbidity plume associated with the discharge operations.

(e) Odor. There would be no odor problems associated with the dredged material since the material contains few organics.

(f) Taste. Not applicable.

(g) Dissolved Gas Levels. There would be improved water quality at the site from the increased dissolved oxygen levels.

(h) Nutrients. The material to be discharged is mainly sand with shell fragment, therefore no nutrients would be bound in the material and no release of nutrients would be anticipated.

(i) Eutrophication. No eutrophication is anticipated. The project will create a tidal flushing which will decrease excessive algal growth.

(2) Current Patterns and Circulation. Currently there is fresh water surface water run-off into the pits with stagnation occurring after these surges. With the new design there will still be freshwater input but there will also be tidal interchange.

(3) Normal Water Level Fluctuations. The only fluctuations at this site are the freshwater surges from rainfall occurrences. With the new project there will still be the fresh water inputs but also tidal flushing.

(4) Salinity Gradients. With the new tidal connection there will be a salinity gradient in this oligohaline environment.

(5) Actions That Will Be Taken to Minimize Impacts. The disposal site will be operated to maintain state water quality standards.

c. Suspended Particulate/Turbidity Determinations

(1) Expected Changes in Suspended Particulate and Turbidity Levels in Vicinity of Disposal Site. No changes are anticipated because the dredged material is sandy material containing few fines.

(2) Effects (degree and duration) on Chemical and Physical values

(a) Light penetration. Light penetration would be reduced during disposal operations. This would be short-term in duration and would not cause any significant adverse effects. Long-term benefits to local environment from improved water quality and increased light penetration.

(b) Dissolved Oxygen. There would be an increase in dissolved oxygen levels in the pits from the discharge of the sandy dredged material.

(c) Toxic Metals and Organics. No toxic materials are anticipated to be encountered.

(d) Pathogens. Not Applicable.

(e) Aesthetics. There will be an increase in noise levels and aesthetic degradation from the presence and operation of dredging equipment and the construction equipment.

(f) Others as Appropriate. None.

(3) Effects on Biota (consider environmental values in Sections 230.21, as appropriate)

(a) Primary Production, Photosynthesis. There would be increased primary productivity at the site from the increase in tidal habitat created.

(b) Suspension/Filter Feeders. Little or no impact is expected.

(c) Sight Feeders. There would be increased food availability from the increased habitat.

(4) Actions taken to Minimize Impacts. None required.

d. Contaminant Determinations. No contaminants have been previously encountered and therefore none are anticipated.

e. Aquatic Ecosystem and Organism Determinations

(1) Effects on Plankton. No significant effects.

(2) Effects on Benthos. No significant benthic populations are located in the disposal site and therefore no significant adverse impacts are anticipated.

(3) Effects on Nekton. None are anticipated.

(4) Effects on Aquatic Food Web. There would be a 75-acre increase in estuarine habitat.

(5) Effects on Special Aquatic Sites.

(a) Sanctuaries and Refuges. There would be benefit to the Cockroach Bay Aquatic Preserve from the 75-acre increase in estuarine habitat and the water quality improvement benefits to seagrass growth in the Bay.

(b) Wetlands. There would be a 75-acre increase in wetland habitat.

(c) Mud Flats. Some of the 75 acres increase would be mudflats.

(d) Vegetated Shallows. None would be affected.

(e) Coral Reefs. Not applicable.

(f) Riffle and Pool Complexes. Not applicable.

(6) Threatened and Endangered Species. None would be affected.

(7) Other Wildlife. Not applicable.

(8) Actions to Minimize Impacts. No actions are necessary.

f. Proposed Disposal Site Determinations

(1) Mixing Zone Determination. No mixing will likely occur due to the sandy nature of the dredged material, the shallow water and the small quantity of fines associated with the material.

(2) Determination of Compliance with Applicable Water Quality Standards. Water quality certification had been issued by the State to the Southwest Florida Water Management District under a Notice General Permit for Environmental Restoration. It has since expired. A new certification is being sought for this restoration project. Monitoring of the discharge site will be conducted to insure State standards are met.

(3) Potential Effects on Human Use Characteristic

(a) Municipal and Private Water Supply. Not applicable.

(b) Recreational and Commercial Fisheries. The 75 acres would provide fish nursery areas and open-water fishing areas.

(c) Water Related Recreation. Not applicable.

(d) Aesthetics. The proposed discharge would increase noise and scenic degradation along the Bay front during disposal operations.

(e) Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves. There would be increased opportunities for eco-tourism, bird watching and fishing for the public.

g. Determination of Cumulative Effects on the Aquatic Ecosystem. Since the bottom substrate is silty, the placement of an irregular sandy substrate would provide additional diversity to the area.

h. Determination of Secondary Effects on the Aquatic Ecosystem. Not applicable.